

Patent claims

1. A method for determining the ambient pressure in a turbocharged engine having a butterfly valve (18) placed between a heat exchange chamber (16) and an intake manifold (20), a compressor (14) being provided to compress the air in the heat exchange chamber (16) and the engine being fitted with means for indicating the pressure in the heat exchange chamber (16),

characterized in that it comprises the following steps:

- detecting an opening of the butterfly valve (18),
- measuring the pressure (MAP_UP) in the heat exchange chamber (16),
- determining the ambient pressure (AMP) by measuring the pressure (MAP_UP) in the heat exchange chamber (16) at a predetermined instant defined with respect to a characteristic point on the curve (24, 24') of pressure (MAP_UP) in the heat exchange chamber (16) as a function of time, the ambient pressure (AMP) then being equal to the pressure measured in the heat exchange chamber (16).

2. The determination method as claimed in claim 1, characterized in that each determination of the ambient pressure is stored, and in that a further determination is only carried out if the pressure (MAP_UP) measured in the heat exchange chamber (16) falls below the stored value of the ambient pressure measured previously (AMP_{n-1}).

3. The determination method as claimed in either one of claims 1 and 2, characterized in that, during the measurement of the pressure (MAP_UP) in the heat exchange chamber (16), a check is made, in a predetermined period after the opening of the butterfly valve (18), to ensure that the measured pressure in the heat exchange chamber MAP_UP is passing through a minimum value.

4. The determination method as claimed in claim 3, characterized in that the measurement of the pressure (MAP_UP) in the heat exchange chamber (16) for determining

the ambient pressure (AMP) is made after a predetermined elapsed time Δt after the detection of the minimum value of the pressure (MAP_UP) in the heat exchange chamber (16).

5. The determination method as claimed in claim 4, characterized in that the elapsed time Δt is defined as a function of the engine speed.

6. The determination as claimed in any one of claims 1 to 5, characterized in that the measurement of the ambient pressure (AMP) is made before the engine is started, this ambient pressure (AMP) then being equal to the pressure (MAP_UP) in the heat exchange chamber.

7. The determination method as claimed in any one of claims 1 to 6, characterized in that the ambient pressure (AMP) is also measured when the butterfly valve (18) is closed, the pressure difference between the pressure (MAP_UP) measured in the heat exchange chamber (16) and the ambient pressure (AMP) then being determined as a function of the engine speed.

8. The determination method as claimed in any one of claims 1 to 7, characterized in that, when the butterfly valve (18) remains substantially in the same position for a long period, the ambient pressure (AMP) is calculated in open-loop mode, being decreased by a given value for each time interval.